

REMARKS

In the Office Action, the Examiner objected to the drawings under 37 C.F.R. § 1.83(a) and stated that the adjustable gain must be shown or the features canceled from the claims. Applicants respectfully point out to the Examiner that Fig. 2 illustrates a compensator 60. In Paragraph 24, the specification states, “[t]he compensator 60 provides an adjustable gain to its input to improve accuracy of a feedback loop process and adds dynamics to the process.” Therefore, the drawings should comply with 37 C.F.R. § 1.83(a).

In the Office Action, the Examiner rejected claims 1-20 under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner alleged that “providing an adjustable gain to a difference between the estimated flow rate and the desired flow rate; and computing a command signal to activate [sic] the valve based on the adjustable gain, the desired flow rate and the estimated flow rate” recited in claim 1 is confusing. The Examiner further alleged that a similar recitation in claim 10 is confusing. The Examiner has suggested that the claim recitation be amended to “providing an adjustable gain; and computing a command signal to activate the valve based on the adjustable gain, the desired flow rate and the estimated flow rate.” While Applicants appreciate Examiner’s suggestion, the only difference between the Examiner’s suggestion and the recitation in claim 1 is providing an adjustable gain to a difference between the estimated flow rate and the desired flow rate.

The Examiner stated “[t]he specification clearly shows that a difference between a desired flow rate (Q_{cmd}) and the estimated flow rate (Q_{est}) is generated (at 76) and that this difference is modified by an adjustable gain (in box 60).” In Paragraph 24, the specification describes, “[t]he compensator 60 provides an adjustable gain to its input to

improve accuracy of a feedback loop process and adds dynamics to the process.”

Therefore, the recitations in claims 1 and 10 are clearly supported and described in the specification, and claims 1-20 are believed to comply with 35 U.S.C. § 112, second paragraph.

The Examiner also rejected claims 1-20 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 5,947,140 to *Aardema et al.* or U.S. Patent No. 5,960,695 to *Aardema et al.* In rejecting those claims, the Examiner took official notice that “it is well known to modify a difference in a closed loop system, using an adjustable gain (i.e. either a PI circuit or a PID circuit), to determine a command signal, for purpose of providing improved feedback accuracy” and that “it would have been obvious. . . to modify the difference in the closed loop system of *Aardema et al.*, using an adjustable gain . . . , for the purpose of providing improved feedback accuracy.” Applicants respectfully traverse the rejection for the following reasons.

On the contrary to the Examiner’s assertion that it would have been obvious to modify the system of *Aardema et al.* with an adjustable gain, the system of *Aardema et al.* does not allow such a modification.

Both *Aardema et al.* disclose a system for controlling an independent metering valve in a hydraulic circuit. As illustrated in FIG. 5, a meter block 410 receives a flow signal 315, a pressure drop signal 335, and an off set signal 355 for metering a valve 105 and determines a displacement command 425. The meter block 410 includes a conversion operator 510 that receives the flow signal 315 and computes a relative displacement 515 according to an equation. The relative displacement 515 is computed based on a flow, a pressure drop, a coefficient of discharge, an area gain, a fluid

density, a conversion constant. The area gain W in the conversion operator 510, however, is constant and not adjustable. The meter block 410 in *Aardema et al.* does not allow implementation of such an adjustable gain. Therefore, *Aardema et al.* teaches away from providing an adjustable gain to a difference between an estimated flow rate and a desired flow rate as recited in claims 1, 10, and 20, and the Examiner's official notice should be improper.

Because the method, system, and machine recited in claims 1, 10, and 20 are not taught or suggested by the cited references, the rejection of the claims under 35 U.S.C. §103 should be withdrawn in favor of allowance of the claims.

Claims 2-9 and 11-19 depend from one of claims 1 and 10. Therefore, those claims should also be allowed at least by reason of their dependency from claim 1 or 10.


Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: January 28, 2005


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Reg. No. 48,108